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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,249	12/20/2001	Gregory D. May	7000-209	9021
27820	7590	08/24/2005	EXAMINER	
WITHROW & TERRANOVA, P.L.L.C. P.O. BOX 1287 CARY, NC 27512				WANG, QUAN ZHEN
ART UNIT		PAPER NUMBER		
2633				

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

X

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/027,249	MAY ET AL.	
	Examiner Quan-Zhen Wang	Art Unit 2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 26 July 2005.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,3-7,9-12,14-18 and 20-23 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,3-7,9-12,14-18,20-23 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

1. In view of the amendment filed on 26 July 2005, the Final Office Action mailed on 15 June 2005 has been withdrawn. A new Final Office Action is as follows.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3-7, 9-10, 12,14-18, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (U.S. Patent US 5,986,782) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1).

Regarding claims 1 and 12, Alexander teaches an apparatus (fig. 2) for measuring optical signal power in an optical system (fig. 1), comprising: a wavelength selective switch (fig. 2, wavelength selective device 54) having output ports (fig. 2, output from 54) to selectively pass a received optical signal (fig. 2, signal input from 52) to one of the output ports; and a power meter (fig. 2, power meter 56) which receives the optical signal from the output port and measures the power in the optical signal (column 3, lines 66-67 and column 4, lines 1-60). The system of Alexander differs from the claimed invention in that Alexander does not specifically teach that the wavelength selective switch passes a subset of the optical signals to one of the output ports at the

same time and the power meter measures power in the subset of the optical signals. However, Alexander further teaches that the "wavelength select switch is any device or combination of devices which can take an incoming multiplexed optical signal and output plural optical signals having discrete wavelengths". Alexander further teaches another configuration of the system as an alternative choice (column 4, lines 22-60). Prohaska teaches a wavelength select switch (fig. 5) which can take an incoming multiplexed optical signal and output plural optical signals having discrete wavelengths. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the wavelength select switch taught by Prohaska into the system of Alexander for the wavelength select switch and passes a subset of the optical signals to one of the output ports at the same time and the power meter measures power in the subset of the optical signals in order to have yet another alternative design choice.

Regarding claims 3 and 14, Alexander further teaches that the optical signals comprise different wavelengths of optical energy (fig. 2,  $\lambda_1-\lambda_n$ ).

Regarding claims 5 and 16, Alexander further teaches using a power splitter (optical tap) (fig. 2, tap 42) to divert a portion of the signal power from an incident signal.

Regarding claims 4 and 15, Alexander teaches diverting a portion of optical energy (fig. 2, tap 42) on an optical medium to obtain the optical signals.

Regarding claims 6 and 17, Alexander further teaches that the system comprises a DWDM system (fig. 2,  $\lambda_1-\lambda_n$ ).

Regarding claims 7 and 18, Alexander further teaches successively direct other ones of the optical signal through the wavelength select switch to the power meter and measuring in the other optical signals using the power meter (column 4, lines 22-29).

Regarding claim 9, Alexander further teaches to displaying an indication of the power in the optical signal (fig. 3).

Regarding claim 10, Alexander further teaches to determine if the power in the optical signal has crossed a predetermined threshold and trigger an alarm (fig. 2, local alarm 59) if the power in the optical signal has crossed the predetermined threshold.

Regarding claim 20, Alexander teaches an optical system (figs. 1 and 2) comprising: an optical medium (fig. 2, 40) which carries different wavelengths of optical energy (fig. 2,  $\lambda_1-\lambda_n$ ), an optical tap (fig. 2, 42) which siphons the different wavelengths of optical energy from the optical medium, a wavelength selective switch (fig. 5, wavelength selective device 54) having output ports, which receives siphoned wavelengths of optical energy to one of the output ports; and a power meter (fig. 2, power meter 56) which receives at least one wavelength from the output port and which measures power in the at least one wavelength (column 3, lines 66-67 and column 4, lines 1-60).

Regarding claim 21, Alexander teaches that the optical tap siphons only a portion of the wavelengths from the medium.

Regarding claim 22, Alexander teaches that the wavelength select switch passes, to another of the output ports, a wavelength that is not included in the at least one wavelength (fig. 2)

4. Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alexander et al. (U.S. Patent US 5,986,782) in view of Prohaska (U.S. Patent Application Publication US 2002/0176658 A1) and further in view of Fujiwara et al. (U.S. Patent US 5,274,496).

Regarding claims 11 and 23, the system of Alexander differs from the claimed invention in that Alexander does not specifically teach controlling an optical amplifier in accordance with the power of the optical signal to regulate optical power of the optical signals one the transmission medium. However, it is well known in the art to regulate an optical amplifier using signals tapped off at the output of the optical amplifier. For example, Fujiwara teaches to regulate an optical amplifier by the signals tapped near the output of the amplifier (fig. 3, combination of 3-9 and 13). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the amplifier regulation circuitry taught by Fujiwara into the system of Alexander in order to control the gain of the optical amplifier.

#### ***Response to Arguments***

5. Applicant's arguments filed 7/26/05 have been fully considered but they are not persuasive.

6. Firstly, the Applicant argues that "Claims 6 and 17 deserve special mention. Both claims recite that the optical system comprises a dense Wavelength Division Multiplexing (DWDM) system. The Patent Office asserts that this element is shown by

Alexander in fig. 2. In response to applicant's arguments, the recitation DWDM system has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Secondly, the Applicant argues the motivation to combine Alexander and Prohaska. Alexander clearly points out that "Although the embodiment of FIG. 2 shows wavelength selecting device 54 simultaneously outputting each optical channel and the optical noise samples, it is noted that these signals can be output individually (as when using a tunable wavelength selecting device which locks onto desired channel and noise sample wavelengths). As in the case of the optical switch discussed above, this arrangement greatly reduces the number of power meters needed to receive the optical signals output by the wavelength selecting device" (column 4, lines 49-58). The statement clearly shows that fig. 2 is not the only design choice for the system of Alexander. In other words, the system of Alexander can have another alternative arrangement. While Prohaska discloses a re-configurable wavelength selective device for applications in WDM system (see the background of the invention). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the

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invention was made to incorporate the wavelength select switch taught by Prohaska into the system of Alexander for the wavelength select switch.

Thirdly, the Applicant argues that the combination of Alexander and Prohaska do not teach that “a subset of optical signals are passed through the wavelength selective switch and the subset is measured with the power meter”. The Examiner disagrees the argument. As the Applicant noticed, a single channel is selected and dropped from the wavelength selective device of Prohaska. Please also note that the unselected “subset” wavelengths are also output from the device through another output port. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to measure the output power of the subset wavelengths.

Fourthly, the Applicant argues that motivation for combine Alexander and Prohaska with Fujiwara. Again, the Examiner disagrees the argument. It is a common knowledge in the art to regulate the amplifiers in an optical communication system to keep the system function properly, as it is disclosed by Fujiwara. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the amplifier regulation circuitry taught by Fujiwara into the modified system of Alexander and Prohaska in order to control the gain of the optical amplifier.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

qzw  
8/10/2005



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